



DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION CONTACT: Brian Bailey at 301-201-9217, 240-669-5128, or bbailey@mail.nih.gov. Licensing information may be obtained by communicating with the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases, 5601 Fishers Lane, Rockville, MD 20852: tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished information related to the invention.

SUPPLEMENTARY INFORMATION: Technology description follows:

Immortalized Rhesus macaque Bcl-6/Bcl-xL Stable B Cell Lines as Tools for HIV Antibody Discovery.

Description of Technology:

Scientists at NIAID have developed two immortalized stable B cell lines from rhesus macaques that can have value as research tools for the discovery of neutralizing antibodies of simian origin against HIV and that may have value in the development of an HIV vaccine. These B cell lines encode human Bcl-6 and Bcl-xL proteins, which are major regulators of apoptosis. These B cell lines are derived from the lymph node of a

rhesus macaque (RM) that was infected with SHIV.CH505. It was discovered that, unlike in humans, rhesus macaque B cells from lymph nodes are more effectively immortalized than B cells from Peripheral Blood Mononuclear Cells (PBMCs).

After sample collection and cryopreservation, pro B cells were isolated, sorted by flow cytometry for populations of interest, then activated with CD40 ligand and RM IL-2 followed by transduction with a retroviral vector encoding Bcl-6, Bcl-xL, and green fluorescent protein (GFL), thereby creating immortalized clonal lines. Two clones were down selected for their *in vitro* neutralizing ability against HIV pseudovirus CH505.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

Potential Commercial Applications:

- Bcl-6 and Bc-xL immortalization is a valuable and flexible tool for HIV antibody discovery in rhesus macaques.
- Contributes to pre-clinical therapeutic and vaccine development.

Competitive Advantages:

- The cell lines have been characterized and are readily expandable for bulk applications as well as for making high-throughput clonal cultures with or without antigen probes in 384-well plates.

Development Stage:

- Research Materials

Inventors: Jakob Samsel, PhD; Richard Koup, MD; Kristin Boswell, PhD; all of NIAID.

Publications: Samsel, Jakob, et al. "Rhesus macaque bcl-6/bcl-XL B cell immortalization: Discovery of HIV-1 neutralizing antibodies from lymph node." *Journal of Immunological Methods*, vol. 516, May 2023, p. 113445, <https://doi.org/10.1016/j.jim.2023.113445>

Intellectual Property: HHS Reference No. E-196-2023-0-EIR-00.

Licensing Contact: To license this technology, please contact Brian Bailey at 301-201-9217, 240-669-5128, or bbailey@mail.nih.gov., and reference E-196-2023.

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